Army Boneyard Feasibility Study

November 10, 2003

Outline

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- **Study Approach**
- **Alternatives**
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  - Recurring Expenses
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Issue

Q: **Is it feasible for the Army to establish, or use existing site for an equipment boneyard?**

A: **The study results indicate that an Army boney feasible and offers an economic benefit to the**

Study Approach

- Focus on major end items managed and identified as unneeded by Tank-Armaments and Automotive Command (TACOM) (Abrams, Bradley, Howitzer, APCs)
- Identify Feasible Alternatives
- Areas of Analysis
  - Identify current location and storage cost for candidate items
  - Identify costs associated with establishing a Boneyard
    - One-time fixed costs (transportation, set-up, etc)
    - Recurring costs (annual storage and preservation)
  - Identify return on investment for each alternative (break even pt)

Alternatives

- **Alternative 1 - DLA Storage**
  - "Status Quo"
  - Augmented by NG Sites (Camp Shelby, MS and Limestone, ME)
- **Alternative 2 - Army site**
  - Sierra Army Depot (SIAD) used as test case
- **Alternative 3 - Air Force Facility**
  - Davis-Monthan Air Force Base, Tucson, AZ
  - Aerospace Maintenance and Regeneration Center (AMARC)

This study does not address the economic value associated with the demilit & disposal of Army equipment with no current requirements.

Feasibility Analysis

- **One-time Fixed Costs**
  - Removal from DLA facility
  - Transportation to Boneyard facility
  - Boneyard start-up costs
    - Facility Preparation
    - Vehicle Induction Process

Feasibility Analysis based on Abrams Tank stored at ANAD

- **Recurring Expenses**
  - Required annual maintenance
  - Re-preservation process (every 4 years)

- **Trade-off Graphs**

One-Time Expenses (per Abrams)

For vehicles being moved to Boneyard Location from DLA site

Cost Comparison based on Abrams Tank stored at ANAD

	SIAD	AMARC	Camp Shelby	ANAD
Removal from DLA	$ 4,178	$ 4,178	$ 4,178	NA
Transportation (from ANAD)	$ 2,655	$ 2,822	$ 3,500	NA
Facility Start-up	$ 0	$ * 1,422	unknown	NA
Boneyard Induction				
Park/Drop	$ 406	$ 4,095	$ 436	$ 1,030
Maintain Readiness	$ 602	$ 5,847	NA	NA
Complete Preservation	$ 882	$ 15,532	NA	NA
TOTALS				
Park/Drop	**$ 7,239**	**$ 12,517**	**$ 8,114**	**$ 1,030**
Maintain Readiness	**$ 7,435**	**$ 14,269**	**NA**	**NA**
Complete Preservation	**$ 7,715**	**$ 23,954**	**NA**	**NA**

Sunk Cost for assets already at ANAD

* **Assumed 1000 vehicles stored at AMARC**

Sources: TACOM Transportation Offi
SIAD, Mission Ops
AMARC, Business Office

Recurring Expenses – (per Abrams)

No specific annual storage fees, Incorporated as part of labor rate

Total Net Landed Cost for Major End Items in FY03 was $33M (up from $15.5M in FY02)

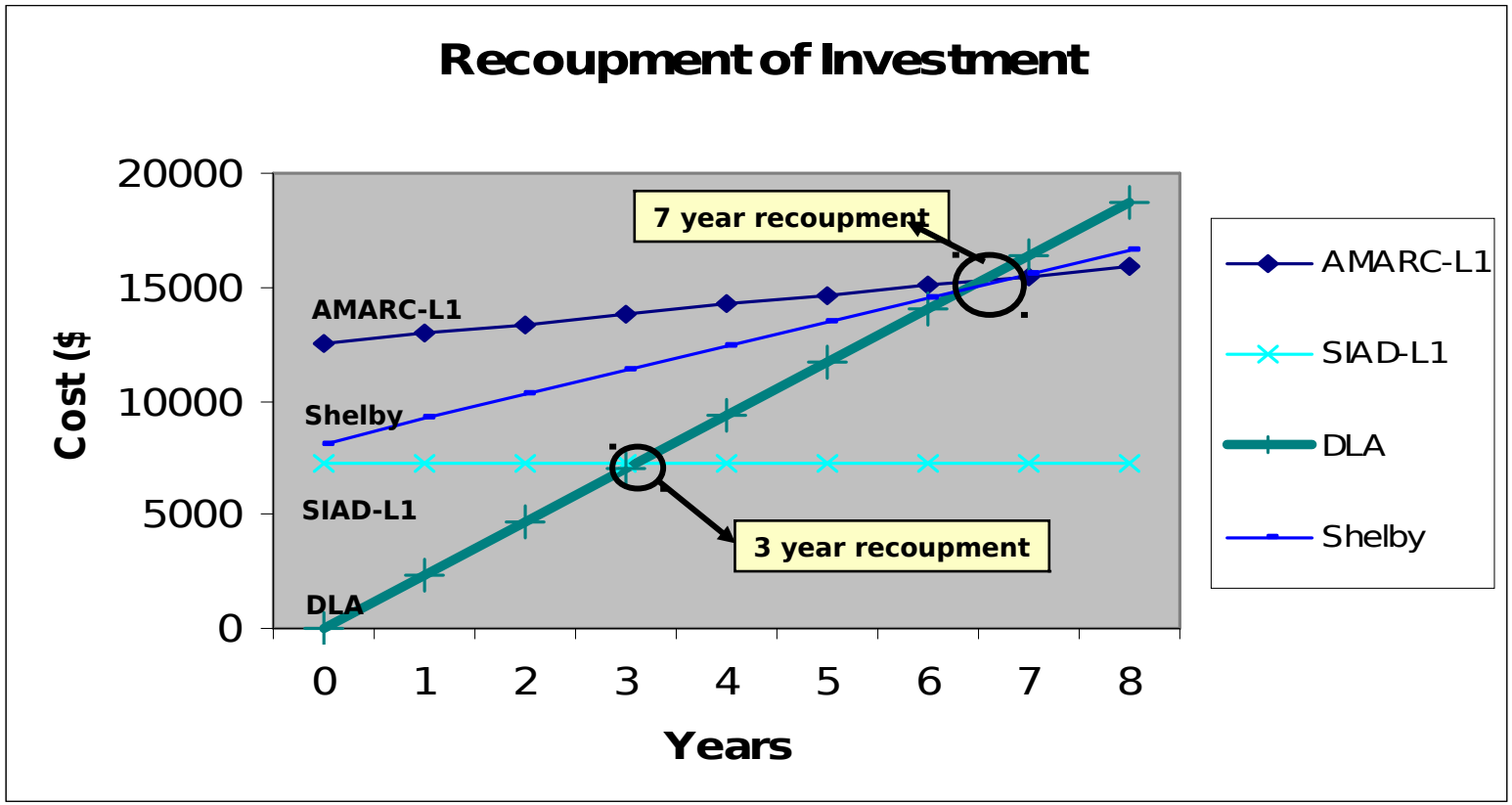
	SIAD	AMARC	Camp Shelby	ANAD
Annual Storage Fee	$ 0	$ 0	$ 1,068	**$ 2,344**
Required **Annual** Maintenance				
Level 1 - Park/Drop	$ 0	$ 424	$ 0	$ 0
Level 2 - Maintain Readiness	$ 910	$ 16,872	NA	NA
Level 3 - Complete Preservation	$ 0	$ 848	NA	NA
Re-preservation **(Every 4 yrs)**	$ 1,225	$ 17,194	NA	NA

Required for vehicles stored under Complete Preservation

Trade-Off Graph – Boneyard Options Constant Dollars - per Abrams

Lowest Level Drop and Park

	Fixed Cost Starting Pt	Annual Cost Slope
DLA	$ 0	$ 2,344
SIAD-L1	$ 7,239	$ 0
Shelby	$ 8,114	$ 1,068
AMARC-L1	$ 12,517	$ 424



Study Findings

- **All three storage alternatives are capable of satisfying the Army's long-term storage requirements for active equipment currently not in use or not identified as obsolete**

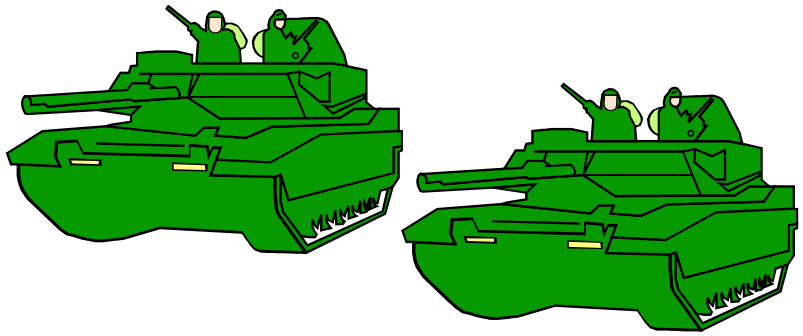
- **Recoupment periods for Army Boneyard costs**

	AMARC	SIAD
Level 1 (lowest)	7 yrs	3 yrs
Level 2 (maintain readiness)	Never	5 yrs
Level 3 (highest)	Never	4 yrs

- **Long-term storage at Camp Shelby more costly than SIAD for equipment not currently stored at Camp Shelby**
  - Annual storage fee of $1,068 compared to none at SIAD
  - Outside storage assets prone to corrosion
  - Capabilities may be limited (space limitations and start-up costs unknown)
  - Becomes cost effective compared to DLA in year Seven

Conclusion/Recommendations

The establishment of a boneyard at an Army owned facility desirable and cost effective option for long-term storage o systems



Recommend further analysis to:

- **Investigate feasibility of alternative Army owned sites**
- **Identify universe of items for long-term storage**
- **Identify optimum preservation level for selected items**